"BECHE-DE-MER" FISHERY FOR TRUK?

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Beche-de-mer, also known as namako or trepang, is the commercial name of a marine food product held in great esteem by the Chinese. It consists of the dried body-wall of certain species of large Holothurians (sea cucumbers). The term Beche-de-mer is the French rendering of the Portuguese name Bicho-do-mar, which signifies sea slug.

The Truk Lagoon, ranging in diameter from 30 to 40 miles, is a complex coral atoll located on latitude 7°25' N. and longitude 151°45' E. in the heart of Micronesia. During the Japanese administration in the early 1940s, as many as one million pounds of Beche-de-mer were exported annually from Truk. Since then there has been no fishery, but informal diver observations indicate large numbers of these animals exist today near the Truk barrier reef. Recently, K. Sachithananthan of FAO and the South Pacific Islands Fisheries Development Agency visited Truk to demonstrate to the Trukese proper collecting and drying techniques for Beche-de-mer. This was done in cooperation with the Marine Resources Development Office in Truk, which provided men, materials, and boats to prepare the animals. Dried samples of Beche-de-mer were then sent to Hong Kong and Singapore to test their market potential.

100 Known Species

There are about 100 known species of sea cucumbers in Truk Lagoon, but few are suitable for Beche-de-mer. The most desirable are the teatfish, Actinopyga nobilis (Figure 1) and prickly redfish, Thelenota aranas. Of lesser commercial value, but also important, is the tigerfish, Holothuria argus (Figure 2). These three species were collected by scuba divers near the Truk barrier reef in water 5 to 40 feet deep. Bait wells in a 36-foot vessel were used to transport the animals alive to the cooking site.

Fig. 1 - Side view of black teatfish, Actinopyga nobilis. The common name is derived from teatlike projections along sides. A characteristic of this species when irritated or attacked is the expulsion of white sticky tubules.

Fig. 2 - Dorsal view of tigerfish, Holothuria argus. Distinctive blue and brown markings characterize this species.

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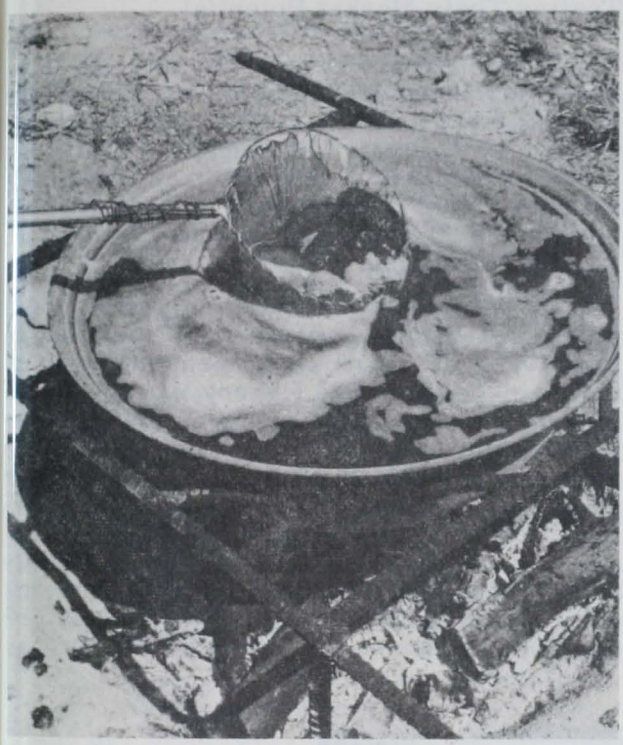


Fig. 3 - All sea cucumbers were placed in a large cauldron of boiling water for one hour prior to drying process.

Fig. 4 - The animals are cleaned prior to drying and the viscera discarded. These samples are black teatfish and tigerfish.

Fig. 5 - The drying house was kept at 80-85° C. for two days to remove moisture from animals. Mangrove wood provided the heat.

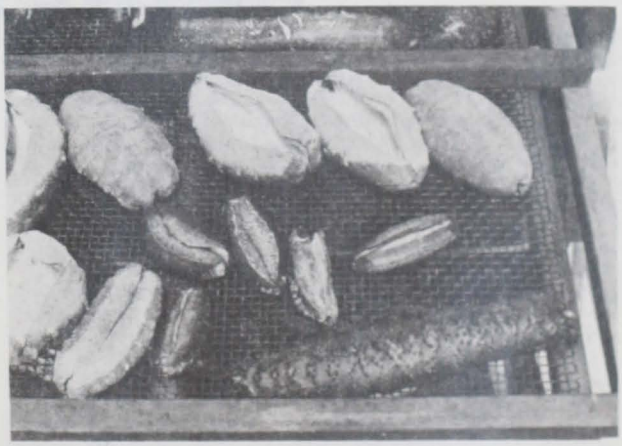


Fig. 6 - Completely dry animals became hard and brittle. Teatfish appear in upper portion of the picture, and a prickly redfish in lower right.

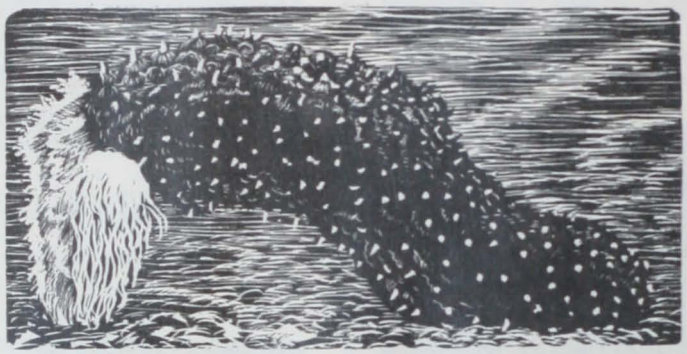
Cooking Procedure

The cooking procedure varies with the species. The teatfish were placed directly into boiling sea water (Figure 3) and cooked for one hour until they were firm and rubber-like. The ventral surface was then slit lengthwise and the viscera removed (Figure 4). The animals were then put in a modified Jaffna Dryer (Figure 5) for 2 days at 80 - 85° C., using mangrove wood as fuel. The flesh became as hard as stone (Figure 6)--hence the name "black stone" or "white stone" in Singapore or Hong Kong markets. Prickly redfish and tigerfish were cleaned by making a small incision in the region of the mouth followed by squeezing out the viscera. After one hour of boiling, the remaining viscera were removed by squeezing, and the animals were dried like teatfish.

Testing Their Market Potential

All animals were graded for size and dryness. Representative samples were packaged in plastic bags, and the sealed bags were airshipped to markets in Singapore and Hong Kong for evaluation. Similar premium grade samples from other areas in Micronesia brought as high as two dollars per pound, K. Sashithananthan reported.

The potential for establishing an export market for Beche-de-mer from Truk appears promising, but more work needs to be done before a commercial fishery can be established. The size of the resource must be determined so that local businessmen can estimate the magnitude of the processing plant needed. A packaging technique for maintaining the dryness of the animals is also desirable because the high humidity in Truk rapidly hydrates the dried animals. These problems can be rapidly overcome if the animals are abundant and command a high market price.



Sea Cucumber